

FAIRCHILD

DUMONT LABORATORIES

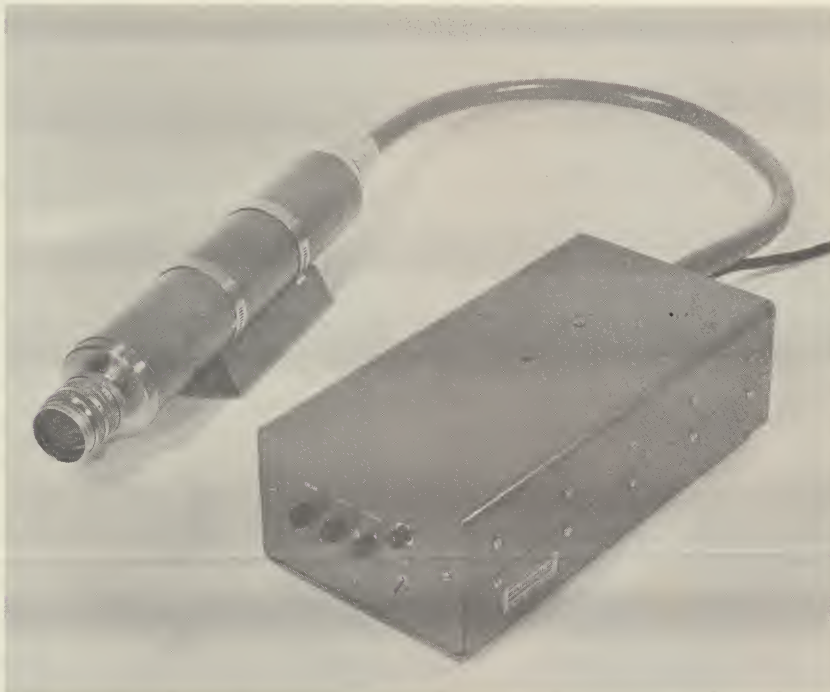
Divisions of Fairchild Camera and Instrument Corporation

Electro-Visual Systems

TCS-950

ULTRA-HIGH RESOLUTION TELEVISION CAMERA SYSTEM

- SCAN RATES FROM 525 LINES/FRAME (EIA STANDARD) TO 1029 LINES/FRAME
- 1000 LINE HORIZONTAL RESOLUTION (MINIMUM) AT ALL SCAN RATES, AT 4:3 OR 1:1 ASPECT RATIO
- ADVANCED SOLID-STATE DESIGN REQUIRES NO TUBES OF ANY TYPE (EXCEPT VIDICON)
- INTEGRAL MICROLOGIC[®] EIA TYPE SYNC GENERATOR AVAILABLE
- UTILIZES ONE-INCH MAGNETIC VIDICON WITH PRECISE ELECTROMAGNETIC ALIGNMENT



The TCS-950 Television Camera System is a multiple scan rate, ultra-high resolution camera offering the highest quality available in an off-the-shelf Vidicon camera. Designed for application where fidelity of image reproduction, stability of performance, ease of operation, reliability, small size, and lower power input are important, the TCS-950 may be operated as a single piece camera with the Camera Head mounted to the Camera Control, or as a two-piece camera with the Camera Head remotored up to 1000 feet from the Camera Control.

FEATURES OF THE TCS-950 TELEVISION CAMERA SYSTEM:

- 1000 line horizontal resolution (minimum) at scan rates to 1029 lines/frame, 30 frames/second interlaced 2:1, aspect ratio 4:3 or 1:1
- Vertical resolution 700 TV lines (with 1029 line format)
- Small size, low weight, low power requirement
- 25 mc video bandwidth
- 36 db S/N ratio @ 1 fc faceplate illumination
- Self-contained focus wobbler facilitates electromagnetic alignment adjustment
- Scan linearity within $\pm 2\%$ at all scan rates
- 20% over scan (minimum) available at all scan rates.
- Automatic light level compensation
- Continuously variable delay line aperture correction
- Adjustable Gamma Correction
- Keyed video clamp
- Dual isolated video outputs
- Sweep protection
- Constant current vidicon filament supply
- Stabilized constant current focus coil supply
- Silicon semi-conductors
- Audio communication facility provided
- Video compensation for long cable runs

DUMONT LABORATORIES / DIVISIONS OF FAIRCHILD CAMERA
AND INSTRUMENT CORPORATION
750 Bloomfield Avenue, Clifton, New Jersey

specifications:

1.0 INTRODUCTION

The TCS-950 Television Camera System is a completely transistorized vidicon pickup camera suitable for use where extreme fidelity of image reproduction by a small camera is a prime requirement.

2.0 MECHANICAL DESCRIPTION

2.1 General

The TCS-950 employs modular hand-wired construction on stainless steel frames and chassis. The Camera Head is cylindrical in shape and is normally provided with a "C" mount lens adapter. The compact construction of the Camera Control permits it to be easily mounted in a number of configurations. For use as a one-piece camera, the Camera Head attaches to the Camera Control via a mounting bracket. This bracket also permits the use of a regular photographic tripod, $\frac{1}{4}$ " x 20 thread.

2.2 Weight

2.2.1 Camera Head 5 lbs. 4 oz.

2.2.2 Camera Control 16 lbs. 4 oz.

2.3 Dimensions

2.3.1 Camera Head 2-7/8" dia. x 13 $\frac{1}{4}$ " long (not including lens)

2.3.2 Camera Control 13 $\frac{1}{4}$ " x 6-5/8" x 4"

2.4 Mounting

2.4.1 Camera Head Standard $\frac{1}{4}$ " x 20 tripod hole

2.4.2. Camera Control 19" Rack Mounting Available

3.0 ELECTRICAL DESCRIPTION

3.1 General

The TCS-950 consists of a Camera Head, Camera Control and interconnecting cable. Used in conjunction with a suitable lens and high resolution monitor, it forms a complete high quality closed circuit television system.

3.2 **Input Power** — 117 $\pm$ 10% volts, 62 watts, 50/60 $\pm$ 3% cycles per second. (Includes Sync Generator)

3.3 Output Signals

3.3.1 Video — Dual Isolated Outputs, 1.4V peak-to-peak black negative, 75 ohms source terminated.

3.3.2 Horizontal Drive — 4 volts negative into 75 ohms

3.3.3 Vertical Drive — 4 volts negative into 75 ohms

3.3.4 Mixed Blanking — 4 volts negative into 75 ohms

3.3.5 Composite Sync — 4 volts negative into 75 ohms

3.4 Scanning Frequencies

3.4.1 Horizontal (lines/frame) 525, 625, 675, 729, 875, 945, and 1029 typical. Other rates available.

3.4.2 Vertical (frames/sec) 50/60 interlaced 2:1

3.5 Image Fidelity

3.5.1 Resolution

3.5.1.1 Center Horizontal — 1000 lines minimum

3.5.1.2 Corner Horizontal — 600 lines minimum

3.5.1.3 Vertical — 700 lines @ 1029 line scan rate

3.5.2 Gray Scales — 10

3.5.3 Scan Linearity — within $\pm$ 2% at all line rates

3.6 Signal-to-noise Ratio

3.6.1 At 1 foot-candle faceplate illumination — 36 db

3.6.2 At 0.5 foot-candle faceplate illumination — 30 db

4.0 ENVIRONMENTAL CAPABILITY

4.1 Ambient Temperatures

4.1.1 Continuous Operation — 20°C to +55°C

4.1.2 Continuous Operation at reduced performance — 20°C to +70°C

4.2 **Humidity** — up to 95%

4.3 **Cooling** — None required with camera or camera control

OPTIONS AVAILABLE WITH THE TCS-950 CAMERA

1. Adjustable White Peak Signal Limiter
2. Video Polarity Reversal
3. Sweep Polarity Reversal
4. Integral binary count MICRO-LOGIC® Sync Generator
5. Crystal Control of Sync Generator
6. Four Lens Turret
7. Balanced Outputs
8. Delay Compensation for long cable runs

September 1965

Mr. Theodor H. Nelson
Instructor in Sociology
Vassar College
Poughkeepsie, New York 12601

Gentlemen:

Aware of your keen interest in new products for information display, I have taken the liberty of sending you the enclosed data sheets which describe in detail the new Fairchild Instrumentation TCS-950 Closed-Circuit Television system.

The system was designed for applications demanding the highest standards of image reproduction fidelity, stability of performance and reliability.

The camera head measures 2-7/8 inches in diameter, by 13-1/4 inches in length, and utilizes a one-inch vidicon, the only tube in the system. The camera is operable at scan rates from 525 to 1029 lines per frame. The TCS-950 produces resolution of 1000 horizontal lines and up to 700 lines vertically. This is achieved with a new, low noise, pre-amplifier with a 25 mc. bandwidth.

Solid state design, including Fairchild micrologic circuitry, assures space age reliability at commercial off-the-shelf prices.

Fairchild Instrumentation can supply a complete system, including camera, vidicon, control unit, EIA sync. generator, high resolution monitor, and cabling for less than \$5,500.00.

Interested? Pick up the telephone and call me at Area Code 201 - 773-2000, Ext. 595, for additional information. We would appreciate hearing from you.

Very truly yours,



Robert J. Henderson
Sales Manager
Electro-Visual Products Department

RJH/es

Encl: TCS-950 brochure
FR-2 brochure
HL Monitor brochure